# Reconstruction of the 3D Object Model: A review


## ABSTRACT

The three-dimensional (3D) reconstruction model of a real object is useful in many applications ranging from medical imaging, product design, parts inspection, reverse engineering to rapid prototyping. In the medical field, imaging techniques such as computed tomography (CT), magnetic resonance imaging (MRI) and single positron emission tomography (SPECT) are applied to create 3D images from emanation measurements for disease diagnoses and organ study. On the other hand, reconstruction is widely utilized to redesign manufacturing parts in order to save production cost and time. A typical reconstruction application consists of three major steps, which are data acquisition, registration and integration as well as surface fitting. Based on the nature of data captured, the 3D reconstruction model can be categorized into two groups: methods working on (i) two-dimensional (2D) images and (ii) sets of 3D points. This paper reviews different methods of 3D object model reconstruction and techniques subjected to each method.



**Keyword:** 3D models; Reconstruction; Computer tomography; MRI.